DOCUMENT RESUME

ED 373 722 IR 016 732

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TITLE James D. Finn's Contribution to the Development of a Process View of Educational Technology.
PUB DATE 94
NOTE 9p.; In: Proceedings of Selected Research and Development Presentations at the 1994 National Convention of the Association for Educational Communications and Technology Sponsored by the Research and Theory Division (16th, Nashville, TN, February 16-20, 1994); see IR 016 784.
PUB TYPE Historical Materials (060) -- Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Audiovisual Aids; Automation; *Computer Uses in Education; Educational Philosophy; *Educational Technology; Elementary Secondary Education; Higher Education; Intellectual Disciplines; *Technological Advancement
IDENTIFIERS *Finn (James D); *Process Models; Professions

ABSTRACT

This study focuses on the thoughts and activities of James D. Finn and examines the influence that these thoughts and activities had on later events and outcomes in the field of educational technology. Finn aimed to upgrade the status of audiovisual education to a professional field of study and endeavored to change the name of the field to educational technology and to base it on research and theory. His early work concentrated on automation in education, initially considering automation to be an expansion of technology. In the early 1960s, he changed his focus to technology, always emphasizing that technology was more than just machines, that it included processes, management, and human and nonhuman controls. Despite shifts in his philosophical orientation, Finn remained a proponent of technology as process. The ideas that Finn articulated had the long range vision that professionalized the audiovisual field. (Contains 16 references.) (SLD)

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Title:

James D. Finn's Contribution to the Development of a Process View of Educational Technology

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History can be viewed as an interaction. It can be the interaction between the empirical and the hermenuetical (the goal-to understand), and the interaction of science and art, analysis and expression, description and interpretation, and events and thoughts.

This study is an intentional explanation James D. Finn's thinking which had an enormous influence on the development of the process view of educational technology. An intentional explanation focuses on the thoughts and conscious activities of an individual, or group of individuals, and examines the influence that these thoughts and activities had on later historical events and outcomes.

Finn's contribution to the development of the process view of educational technology can best be analyzed in light of his desire to upgrade the status of the audiovisual education movement to a professional field of study. Finn's influence on the first definition of the field in 1963 and his effort to change the name of the field to educational technology in 1965 are just some of the examples of his contribution to the process view of educational technology.

Finn covered much ground in his writing about the techniques of the field - the systems concept, the importance of programming, the difference between a scientific and an empirical approach to developing instruction -.to name but a few. But Finn's interest in the process view of the field can be traced to his earliest writings. In 1953 Finn evaluated the audiovisual field as a candidate for professional status. He identified six characteristics of a profession:

> (a) an intellectual technique, (b) an application of that technique to the practical affairs of man, (c) a period of long training necessary before entering into the profession, (d) an association of the members of the profession into a closely-knit group with a high quality of communication between members, (e) a series of standards and a statement of ethics which is enforced, and (f) an organized body of intellectual theory constantly expanded by research (Finn, 1953 p.7).

Of these six characteristics of a profession the two that were most important to the development of Finn's process view of educational technology were (1) an intellectual technique and (2) a body of intellectual theory expanded by research. In fact, Finn sought to have the intellectual technique of the field based on research and theory.

Finn (1953) argued that "the most fundamental and most important characteristic of a profession is that the skills involved are founded upon a body of intellectual theory and research" (p.8). Once he had established the importance of systematic theory and research for a profession, Finn further explained his position by saying that "...this systematic theory is constantly being expanded by research and thinking *within* the profession" (p.8). Finn was arguing that a profession conducts its own research and theory development to complement the research and theory that it adapts or adopts from other academic areas of study.

In 1953 Finn was generally satisfied that "the audiovisual member does possess an intellectual technique" (p.8), but it was not clear just what that technique was. Finn described the technique as thinking "reflectively in such varied areas as the critical evaluation of materials, the visualization of abstract concepts, the improvement of instruction, and in many aspects of planning and administration" (p.8). Finn did not further

describe what he meant by thinking reflectively. It was not clear whether he was using the phrase as John Dewey had, in relation to the scientific method (Finn was certainly familiar with the work of John Dewey), or if he meant it as something altogether different. It seems likely that he meant it as the application of research and theory to professional practice.

But Finn believed that the audiovisual field was plagued by a "lack of theoretical direction" (1953, p.14). He attributed this to a general "lack of content" (p.14) in the field. He also charged that there was an absence of "intellectual meat" (p.14) in the meetings and professional journals of the field. In his argument promoting the development of a theoretical base for the audiovisual field, Finn warned that:

> Without a theory which produces hypotheses for research, there can be no expanding knowledge and technique. And without a constant attempt to assess practice so that the theoretical implications may be teased out, there can be no assurance that we will ever have a theory or that our practice will make sense (1953, p.14).

Finn spent much of his career rectifying this deficiency in research and theory in the audiovisual field.

Whether one agrees with Finn's criteria and reasoning about professions in general, or the audiovisual profession in particular, is not the issue here. What is important is that this argument was largely accepted by, and had a profound effect on, the leadership of the audiovisual field. It also established a direction for Finn's future research and scholarship. The view that technology was primarily a process was a favorite theme of Finn. Although he was the acknowledged leader of the early "educational technology is a process" movement (Heinich, 1968; Ely, 1970; AECT, 1977), Finn was not always consistent about the label that he used to describe what he meant by the complex processes involved in audiovisual education.

Finn's earlier writings (1955, 1957) concentrated on the concept of automation in education. Analyzing the possibilities of automation for education, Finn wrote that "...automation is not a manless [sic], machine-operated production. *Its primary characteristic is a process - a way of thinking involving patterns and self-regulation* (my emphasis). It is here that the educational implications are tremendous" (1955, p.145).

Two years later Finn produced the first in a series of three articles about the potential for automation in education for *AV Communication Review*, "Automation and Education: General Aspects" (1957). In that article Finn identified the important characteristics of automation and its associated processes as: "..(a) the concept of systems; (b) the flow and control of information; (c) scientific analysis and long-range planning; (d) an increase in the need for wise decision making; and, (e) a high-level technology" (pp.115-116).

Initially, Finn considered automation to be an expansion, an outgrowth, of technology. The fifth characteristic of automation that Finn identified, that automation included "a high-level technology", showed that at this point in his thinking Finn drew a distinction between automation and technology. Soon, however, this distinction became blurred.

Finn frequently used the terms "technical" and "technology" in his early writings (1953, 1955, 1956). But it was in the early 1960's when Finn changed the focus of those educational processes which interested him from automation to technology.

Finn spent a substantial part of his professional life trying to dispel the image that technology was just machines. In 1960 (b) Finn wrote that "technology, however, is more than an invention - more than machines. It is a process and a way of thinking" (p.142). Continuing, Finn explained the relationship of technology to the instructional process by saying

> (one) must remember that, in addition to machinery, technology includes processes, systems, management, and control mechanisms both human and non human, and above all, the attitude discussed by (Charles) Beard - a way of looking at problems as to their interest and difficulty (broadly conceived) of those solutions. This is the context in which the educator must study technology (p.145).

In 1961 Finn made only minor revisions of his description of technology. In an article analyzing the audiovisual needs for the preparation of teachers, he argued that "technology...is much more than machines; technology involves systems, control mechanisms, patterns of organization, and a way of approaching problems" (Finn, 1961 p.209).

In opposition to the view that technology is a device or series of devices, Finn argued that machines were "symbols...and must be thought of in connection with systems, organizational patterns, utilization practices, and so forth, to present a true technological picture" (Finn, 1961 p.210). And later, as part of a speech delivered to the John Dewey Society in 1962, Finn said that "technology is not, as many of the technically illiterate seem to think, a collection of gadgets, of hardware, of instrumentation. It is instead, best described as a way of thinking about certain classes of problems and their solutions" (Finn, 1962 p.70).

In 1964 he wrote that "Technology is not just hardware-or even hardware and materials. Technology is a way of organizing, a way of thinking, involving at the center, to be sure, man-machine systems, but including systems of organization, patterns of use, tests of economic feasability "(1964, p.295).

In 1966 (b) he followed that with "Instructional technology [should] be viewed as defined in this paper-a complex pattern of man-machine systems and organizations based on concepts of feasibility" (Finn, 1966b, p.247).

It is unclear if Finn decided that technology, which in 1957 he considered a condition of automation, had to be determined and clarified as part of a desired automated state of education, or if Finn decided to change the label of the object that he was talking about all along, "automation" to "technology". In either case, there are certain themes which continued to appear throughout his writing.

There is a great deal of similarity and consistency about the way in which Finn described automation and technology. He argued that automation was a process and a way of thinking (1955, 1957) and that technology was a process and a way of thinking (1960b, 1961). He further stated that automation included systems, controls, scientific analysis and planning (1955, 1957) and that technology included systems, controls, and management and/or organization (1960a, 1961). Finn's discussions of scientific analysis and planning in automation (1957) are very similar to his discussions of management and organization included in technology (1961, 1962).

While Finn's descriptions of automation and technology remained similar over the years, there is one important facet that did seem to shift within Finn's writing on technology: the relationship of technology to problems. In 1960 (a) Finn viewed technology as "a way of looking at problems". In 1961 Finn stated that technology is "a way of approaching problems". It could be argued that "looking at problems" means defining problems, and that "approaching problems" means defining problems but also taking some action to solve a problem as well. The phrases "looking at problems" and "approaching problems" both infer a way to begin to solve problems. Both phrases infer a certain "attitude" (1960a) toward professional practice. This attitude would direct the intellectual technique of the profession.

In 1962 there is a not-so-subtle shift that occurs in Finn's outlook which carried on through his subsequent discussions (1965b, 1966b) of technology and problem solving. It was the view that technology is "a way of thinking about *certain classes* (my emphasis) of problems". It is clear in this statement that there were limitations to technology's problem solving ability. It seems to mean that technology either could not solve, or should not be used to solve, all problems. Considering Finn's optimistic view of technology one could easily conclude that his position prior to 1962 was that technology was essentially the technique which ould be used to look at or approach all educational problems.

It is difficult to assess what prompted Finn to make this further clarification in his position. Perhaps it was the fact that this 1962 statement was part of his address to the John Dewey Society. The prospect of talking with educational philosophers may have provided Finn with reason to reflect on his ideas concerning technology as a way of thinking. What is certain is that this shift in Finn's writing on technology remained for the rest of his professional life.

The implication of this shift by Finn is not recognized by those members of the field who describe educational technology as simply "a problem solving approach to education". It does not seem as if Finn intended educational technology to be viewed as an all encompassing approach to education as was inferred by later definitions of our field.

Another look at his analyses of technology reveals that even Finn, the great proponent of technology as process, conceded that machines and materials were a major part of instructional technology. This is best seen in his discussion (1965a) which was aimed at changing the name of the professional organization and the field to instructional technology. There he stated that "machines, materials, methods of use, [and] systems are all part of the pattern of rational mechanisms operating as means to educational ends. And, as Hoban has said, machines are central to this concept even though they alone are not technology" (Finn, 1965a, p.193). This statement is consistant with his prior writings on technology, all of which include machines as an essential component of technology. For Finn, it seemed that if there were no machines there could be no technology.

Conclusion

There are three conclusions which can be drawn from this brief exploration of Finn's writing about the intellectual technique of our field: 1) Finn was a man with a vision for his profession. But as is often the case those with long term visions they focus on broad ideas and do not always develop those ideas into specific concepts. This seems to be the case with Finn as we never get a specific statement of his definition of technology; 2) Finn changed his ideas over time , but so do we all. Here it is exemplified by his discusions on problems and the terms automation and technology; and 3) Finn may have been misinterpreted by others in our field. What is certain is that ideas which he himself articulated were changed or

reoriented by the membership of the field. This is simply a playing out of the premise that ideas change over time.

No matter how one views his writing and his influence on the development of educational technology Finn had the long range vision which gave direction to his work, and he had the drive to gain that direction- to professionalize the audiovisual field.

References

AECT (1977). *The definition of educational technology.* Association for Educational Communications and Technology. Washington D.C.

Ely, D. P. (1970). Toward a philosophy of Instructional Technology. *The British Journal of Educational Technology.* Vol. 1 No.2 (pp.81-94).

Finn, J. D. (1953). Professionalizing the audio-visual field. *Audio-Visual Communications Review.* Vol. 1. No. 1. (pp.6-17).

Finn, J. D. (1955). A look at the future of AV communication. Audio-visual Communication Review. Vol.3. No.4. Fall (pp. 244-256).

Finn, J. D. (1956). AV Development and the concept of systems. *Teaching Tools.* Vol. 3 No.4. (pp.163-164).

Finn, J. D. (1957). Automation and Education: general aspects. *Audio-visual Communication Review.* Vol.5.No.1. Winter (pp.343-360).

Finn, J. D. (1960 a). Automation and Education: A new theory for instructional technology. *AV Communications Review.* Vol. 8. No.1 (pp. 5-26).

Finn, J. D. (1960 b). Teaching machines: Auto-instructional devices for the teacher. *NEA Journal,* Vol. 49. No.8, November 1960. pp. 41-44.

Finn, J. D. (1961). New techniques for teaching in the sixties. *Teacher Education: Direction for the Sixties,* American Association of Colleges for Teacher Education, National Education Association. (pp.31-42).

Finn, J. D. (1962). A walk on the altered side. *Phi Delta Kappan.* Vol.44, No.1, October (pp.29-34).

Finn, J. D. (1964). The Franks had the right idea. NEA Journal, Vol.53, No.4. April, (pp.24-27).

Finn, J. D. (1965 a). Instructional Technology. *Audiovisual Instruction.* Vol.10. No.3 (pp.192-194).

Finn, J. D. (1965 b). The marginal media man., Part 1: the great paradox. Audiovisual Instruction. Vol.10, No.10 December, (pp.762-765).

Finn, J. D. (1966 a). The emerging technology of education. In *Educational implications of Technological Change.* Appendix Vol.4 Technology and the American Economy.

Prepared for the national commission on Technology, Automation, and Economic Progress. Washington D.C. U.S. Government printing office, February (pp.33-52).

Finn, J. D. (1966 b). Educational technology, innovation, and Title III. Prepared for Projects to advance creativity in education (PACE).

Heinich, R. (1968). Is there a field of educational communications and Technology? Audiovisual Instruction Vol. 18, No.5 (pp.44-46).

Note: The articles, reports, and chapters written by Finn that are listed above include the page numbers of the documents which were from the original source of these publications. However, many of the quotes cited above use the page numbers from the book *Extending Education Through Technology, selected writings by James D. Finn* edited by Ron McBeath, AECT, Washington D. C. 1972. This volume is a compilation of the best of Finn's writing and has been very useful in my research. I have checked many of the papers of this volume against the original and finds them to be most accurate. For practical puposes, in this study I have used that volume instead of many of the original articles.

Finn's six characteristics of a profession:

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(b) an application of that technique to the practical affairs of man,

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The two that were most important to the development of Finn's process view of educational technology were (1) an intellectual technique and (2) a body of intellectual theory expanded

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Quotes

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Instructional technology [should] be viewed as defined in this paper-a complex pattern of man-machine systems and organizations based on concepts of feasibility and that proposals centering on hardware and materials be required to show some understanding of this concept on an operational basis. (Finn, 1966 p.247)

"This has resulted in a technological or empirical approach to solving practical problems of teaching and learning " (1966, p.283)

Conclusions

1) **Finn was a man with a vision for his profession. But as is often the case those with long term visions they focus on broad ideas and do not always develop those ideas into specific concepts. This seems to be the case with Finn as we never get a specific statement of his definition of technology;**
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